

on the fossil plants from the Lignitic shales, and points out their "Miocene" characters, as compared with other fossil floræ of North America and Europe; but, seeing that Reptiles of Mesozoic types are associated with them, that *Baculites* and *Inocerami* occur also in the Lignitic series, and that a similar fossil flora occurs with "Cretaceous" marine animal remains in both Dakota and Vancouver, he declines to assign these transitional beds to a definite systematic period, unless it be Lower Eocene, when the "Cretaceous" fauna would thus seem to have persisted in the sea, whilst the land was becoming covered with a new flora. He enumerates:—*Filices*, 2; *Equisetaceæ*, 2; *Coniferæ*, 3; *Monocotyledones*, 4; *Dicotyledones*, 15. Several fossil woods examined by the microscope are also described and illustrated.

The fossil plants above mentioned came—some from "Porcupine Creek," agreeing with the "Fort-Union group" of Nebraska, and others from "Great Valley," more nearly corresponding with the "Green-River group." The shales of the first of these groups, at Milk River, yielded fragmentary remains of several Dinosaurs, Tortoises, and Gar-fishes, determined by Prof. Cope, in Appendix B, as *Cionodon stenopsis*, *Hadrosaurus*?, *Trionyx vagans*(?), *Trionyx* sp.(?), *Plastomenus costatus*, *Pl. coalescens*, *Compsemys ogmius*, *C.?* *victus*, *Clastes*, sp.

The Report has a good Index. It is well printed, and is illustrated throughout with numerous careful sections, mostly copied by "photo-engraving" from pen-and-ink sketches by the author.

#### *Geology of Indiana.*

*Fifth Annual Report of the Geological Survey of Indiana, made during the year 1873, by E. T. Cox, State Geologist, assisted by Prof. JOHN COLLETT, Prof. W. W. BORDEN, and Dr. G. M. LEVETTE.* 8vo, 494 pages, with maps, views, and sections. Indianapolis, 1874.

In continuation of former Reports (noticed in the 'Annals,' July 1873), Mr. E. T. Cox and his assistants present the results of their further surveys in Indiana. Rich in coal and iron, this region demands the attention of metallurgists, as the chief portion of the Report satisfactorily shows. Indeed in the interest of the American iron-workers, Reports, by Mr. Hartmann, on the Exhibition of coal and iron at the Universal Exposition at Vienna, on the Iron and Steel Industries of Rhenish Prussia and Westphalia, with a map, and on the manufacture of *Spiegeleisen* (pp. 5–101), precede the Geological Report of Indiana. This latter continues to give careful details of local geology, notices of all minerals and stones of commercial value, and of the manufactures and agricultural resources. The Antiquities, some of the most remarkable in the world, are not neglected; for frequent mention is made of the Mound-builders and of their shell-heaps, tools, and extensive works. At a bend of the Wabash River, in Posey County, an isolated bank, 35 feet high, overhangs the river, which has eaten it half away

within the memory of man, exposing the abundant bones, pottery, and other relics of the Archaic inhabitants. The pottery is described as peculiar, good for food-cooking, thin, and resisting fire to a wonderful extent; some of it will be illustrated next year. A remarkable group of stone fortifications and mounds on the Ohio, in Clarke County, is also delineated and described. The Caves in Lawrence County, with their blind fauna, also receive attention. The Tripoli found in pockets in the cherty limestone, forming the roof of the coal, in Dubois County, is described as siliceous particles of organic origin, probably due to Foraminifera and Sponges (p. 424). Near the base of the Coal-measures in Warren County, Mr. Collett discovered a slab of sandy mud-stone bearing casts of cracks and footprints; of these latter Mr. E. T. Cox gives a lithograph, of the natural size, with the name *Colletosaurus indianensis*. He notices that the bones of the *Amphibamus grandiceps*, Cope, were found in a similar geological horizon in Illinois.

## PROCEEDINGS OF LEARNED SOCIETIES.

### ROYAL SOCIETY.

June 17, 1875.—Joseph Dalton Hooker, C.B., President, in the Chair.

“First Report of the Naturalist accompanying the Transit-of-Venus Expedition to Kerguelen’s Island in 1874.” (Conclusion.) By the Rev. A. E. EATON.

In January 1875, shortly after the departure of the American Expedition from Royal Sound, an opportunity occurred of visiting another part of Kerguelen’s Island. To relieve the ennui of his officers and men, who by that time were thoroughly tired of being detained without any definite occupation in an uninhabited island, Captain Fairfax ordered the ‘Volage’ to leave Observatory Bay, and proceeded to Swain’s Bay, where he remained three weeks. During this period he entertained me as his guest, took me to the best localities in the bay for collecting, and rendered me every assistance that lay in his power. The Royal Society is therefore indebted to Captain Fairfax for a fine series of Algæ from Swain’s Bay, comprising many species not found in Observatory Bay, and some that were not known to be indigenous to the island. Most of these are described in the ‘Flora Antarctica’ as Falkland-Islands species. Captain Fairfax at the same time enabled me to secure the skeleton of a *Globiocephalus*, which was found dead in shallow water by Mr. Forrest (Mids.). Most of the epidermis had been removed by small crustacea, so that it was not possible to ascertain the colour of the animal; but Lieut. Goodridge, R.N., very kindly photographed the carcass before it was flensed, and its